

REMARKS/ARGUMENTS

This Preliminary Amendment is filed concurrently with a Request for Continued Examination (RCE) in response to the final Office Action dated December 10, 2008.

Claims 1–18 are pending in the application. The Office Action rejected Claims 1–6, 9, 10, and 13–18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,048,278 to Jones et al. (“Jones”) in view of U.S. Patent No. 6,401,344 to Moore et al. (“Moore”). The Office Action also rejected Claims 7, 8, 11, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Moore in further view of U.S. Patent No. 6,581,292 to Allis.

Applicant disagrees with each of these rejections and respectfully requests reconsideration of each of the claims in view of the following remarks.

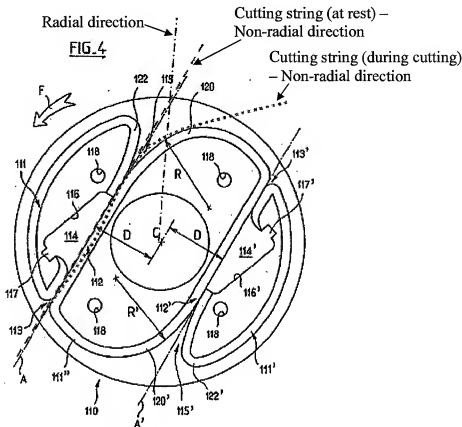
Office Actions in Co-pending Applications

For the sake of full disclosure, Applicant notes that Office Actions have issued in co-pending Application Nos. 10/543,029; 10/585,164; and 10/543,027 (assigned to the present Examiner) that include rejections of claims relating to some of the features discussed in the current Office Action rejections.

Independent Claim 1

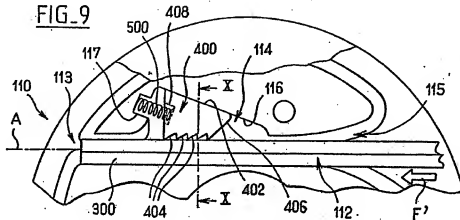
Independent Claim 1 is directed to a cutting head having a passageway for a strand of cutting string and a movable locking element configured to lock the strand of cutting string in its passageway. The passageway is rectilinear and offset from a central axis of the head and has opposite first and second end openings at the periphery of the head. For example, FIG. 4 (reproduced below) illustrates the general location of the passageway **112** with respect to the central axis C of the head. The broken line labeled **A** in FIG. 4 represents the axis along which the passageway **112** extends. The axis A does not pass through the central axis C of the head; rather, as shown in the figure, axis A is offset from the central axis C and is situated a distance **D** from the central axis C. During cutting operations, the strand of cutting string extends along the curved bearing zone **120**, as generally represented by the dotted line in the figure below. Claim

1 has been amended to further recite that “the passageway is configured such that the strand of cutting string exits from the first end opening in a non-radial direction.”



Furthermore, the movable locking element is a one-way locking element that is configured such that “the strand of cutting string can be readily inserted into the passageway only from the first end opening thereof (i.e., from the exit end) and extracted from the passageway only from the second end opening thereof.” For example, in FIG. 9 (reproduced below), and as described on page 14, line 13 through line 25 of the application, a strand of cutting string 300 may be inserted into the opening 115 in the direction of the arrow F' and may be removed from the passageway 112 through the opposite opening 113. If the strand of cutting string 300 is pulled in the direction opposite to the direction of the arrow F', the one-way locking element would exert a gripping force on the strand. Application, page 14, line 29 – page 15, line 6. In other words, due to the gripping force exerted when the string 300 is pulled in the direction

opposite to the F' direction, the strand of cutting string 300 can only be inserted in the F' direction and can only be extracted in the F' direction (i.e., the same direction). Thus, it is a one-way locking element.



Claims 2-18 depend from independent Claim 1 and thus incorporate all of the elements of Claim 1.

Rejection of Claims 1-6, 9, 10, and 13-18 under 35 U.S.C. § 103

Claims 1-6, 9, 10, and 13-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Moore. Applicant respectfully submits that the rejection of Claims 1-6, 9, 10, and 13-18 is improper for the reasons given below.

As described above, independent Claim 1 is directed to a cutting assembly that includes a passageway that is "rectilinear and offset from a central axis of the head." As amended, the passageway is also configured such that the cutting string exits from the first end opening in a non-radial direction. The cutting assembly further includes a movable locking element that is a "one way-locking element, whereby the strand of cutting string can be readily inserted into the passageway only from the first end opening thereof and extracted from the passageway only from the second end opening thereof."

Jones discloses an apparatus for holding a plurality of flexible cutting filaments for cutting grass. The cutting blade R includes "a number of U-shaped passageways 12 disposed

in the disk 8,” as shown in FIGS. 1 and 3. Jones, col. 3, lines 4–7. In particular, each passageway 12 includes leg portions 16 and 17, each extending radially outward from the centrally-located hub 2. Col. 3, lines 11–12. Furthermore, each passageway 12 in Jones includes a structure 34 for locking the cutting filament 10 within its respective passageway 12. The structure 34 includes two parallel, spaced apart wall portions 36, 38 and a transverse wall portion 40, illustrated in FIG. 5. A lock channel 42 is formed on each side of the transverse wall portion 40 “in which a central portion of the cutting filament 10 is wedged.” Col. 3, lines 48–56.

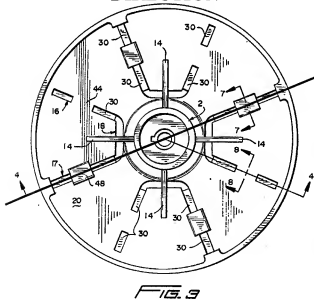
Moore discloses a head for a line trimming apparatus that includes a generally circular body member 2 with a filament channel 5 formed between first and second clamp walls 4, 4a. Moore, FIG. 3; col. 4, lines 13–18. The filament channel 5 is positioned so as to bisect the body 2 into substantially equal halves. Col. 4, line 19. A filament clamp 15 is slidably disposed between the body 2 and a cover 26. As shown in FIG. 4, the clamp 15 has clamp arms 17 that each includes a filament opening 22 for threading the filament therethrough. Col. 5, lines 20–25, lines 38–45; col. 7, lines 27–29. Actuation of a clamp button 21 of the filament clamp 15 moves the filament clamp 15 against a spring 25 and allows a trimming filament 39 to be threaded through the filament channel 5 and the filament openings 22 of the filament clamp 15. Col. 6, lines 38–52. Upon release of the clamp button 21, the clamp 15 slides into place and presses the trimming filament 39 against the first clamp wall 4 to secure the filament 39 in the filament channel 5. Col. 6, lines 52–63.

As further explained below, neither reference teaches or suggests a passageway that is rectilinear and offset from a central axis of the head or a passageway that is configured such that the cutting string exits in a non-radial direction, as recited in independent Claim 1. Furthermore, neither reference teaches or suggests a movable locking element that is a one-way locking element, as recited in independent Claim 1. Therefore, Claim 1 and the claims that depend therefrom are patentable over the cited references.

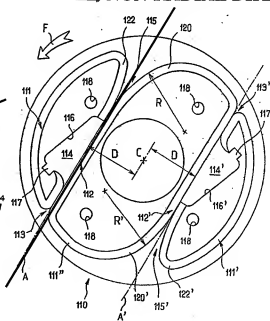
1. Neither Jones nor Moore teaches or suggests a passageway that is rectilinear and offset from a central axis of the head or configured such that the cutting string exits non-radially.

In contrast to Claim 1, Jones does not teach or suggest a passageway that is rectilinear and offset from a central axis of the head. Rather, in Jones, the passageway 12 is arranged to extend radially outward from the centrally located hub. Jones, col. 3, lines 11–12. This necessarily means that the passageway is not offset from the central axis. Furthermore, Claim 1 has been amended to emphasize that the passageway of the claimed invention is configured such that the cutting string exits from the first end opening in a non-radial direction, unlike the passageway in Jones. Figure 3 of Jones and Figure 4 of the present application are reproduced in a side-by-side manner below for the Examiner's convenience. As shown below, the passageways in Jones are configured such that filaments would exit each passageway in a radial direction, whereas in the present application, the passageway is configured to allow the cutting string to exit in a non-radial direction.

**Jones – NOT OFFSET,
EXITS IN RADIAL
DIRECTION**



**Present Application –
OFFSET, EXITS IN
FIG. 4 NON-RADIAL DIRECTION**



As described in Applicant's specification, two advantages of such an offset/non-radial passageway are that the locking mechanism can be arranged in the peripheral region of the head where it does not interfere with the central mounting region, and the head can have a long curved bearing zone **120**. Application, page 15, lines 18–28; Fig. 4.

Moore, likewise, does not teach or suggest a passageway that is rectilinear and offset from a central axis of the head. In Moore, a filament channel **5** is delimited by “diametrically opposed” openings **5a** and **5b**. Moore, col. 4, lines 16–17. In other words, in Moore, the openings of the filament channel **5** are located on opposite ends of a diameter of the head **1**, as shown in FIG. 3 of Moore. By definition, the diameter cannot be offset from the central axis. As a result, the filament channel **5** “bisects the body **2** into substantially equal halves.” Col. 4, line 19. Comparing FIG. 3 of Moore with FIG. 4 of the present application, both reproduced below with the axis of the respective passageways emphasized, it is readily apparent that the filament channel **5** of Moore passes through a central axis of the body **2**, whereas the passageway **112** of the present application is offset from the central axis **C** of the head. Thus, Moore does not cure the deficiency of Jones, and neither reference teaches or suggests a passageway that is rectilinear and offset from a central axis of the head, as recited in Claim 1. Furthermore, as also shown below, the passageway in Moore is configured such that filament would exit the passageway in a radial direction, whereas in the present application, the passageway is configured to allow the cutting string to exit in a non-radial direction.

**Moore – NOT OFFSET, EXITS IN
A RADIAL DIRECTION**

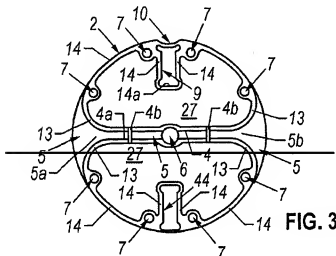
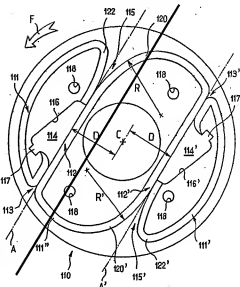


FIG. 3

**Present Application – OFFSET,
EXITS IN A NON-RADIAL
DIRECTION**

FIG. 4



2. Neither Jones nor Moore teaches or suggests a movable locking element that is a one-way locking element.

Jones does not teach or suggest a movable locking element that is a one-way locking element and that allows a strand of cutting string to be readily inserted into the passageway only from the first end opening and extracted only from the second end opening. Rather, in Jones, the cutting filament 10 is slid into the passageway 12 from either one of the two openings 52, 54 until a first intermediate portion 62 of the filament 10 is secured in the leg portion 17 and a second intermediate portion 64 is secured in the leg portion 16. Jones, FIGS. 5 and 6; col. 4, lines 22–30. A third intermediate portion 66 of the filament 10 is then “wedged into the locking channels 42 at the base portion of the passageway 12.” Col. 4, lines 30–32. In this way, a portion 66 of the cutting filament 10 is moved toward the stationary locking structure 34, rather than the structure 34 being moved into engagement with the filament 10.

Furthermore, through engagement of the filament with the locking channels 42 of Jones, “the cutting filament 10 is thereby prevented from working itself loose from the passageway 12.”

Col. 4, lines 32–34. In other words, the cutting filament **10** in Jones may be inserted through either opening **52, 54**, and then, once engaged with the stationary locking structure **34**, the filament of Jones may not be extracted from either opening 52, 54. After being disengaged from the stationary locking structure **34**, the filament **10** may then be extracted from either opening **52, 54**. Thus, the locking structure **34** of Jones serves to lock the filament **10** in a “two-way” configuration. In contrast, the movable locking element of the present application is a one-way locking element, in which a strand of cutting string can be readily inserted into the passageway only from the first end opening of the passageway and extracted from the passageway only from the second end opening.

Similarly, Moore does not teach or suggest a one-way locking element. In Moore, a clamp edge **22a** of each parallel arm segment **20** of the filament clamp **15** serves to “press the trimming filament **39** against the first clamp wall **4**, thus securing the trimming filament **39** in the filament channel **5**.” Moore, FIGS 4 and 8; col. 6, lines 60–63. Once secured, the trimming filament **39** of Moore cannot be extracted, through either opening (**5a** or **5b**), until the clamp button **21** is pressed to displace the filament clamp **15** and release the trimming filament **39**. Col. 7, lines 21–27. Once the trimming filament **39** is released, the filament **39** may be extracted through either opening **5a, 5b**. Again, Moore’s structure serves to lock the filament **39** in a “two-way” configuration, in contrast to the claimed invention. Therefore, Moore does not disclose a one-way locking element and, thus, does not cure the deficiency of Jones.

In addition to the reasons described above with respect to independent Claim 1, Applicant respectfully submits that the rejections of dependent Claims 2 and 6 are erroneous for additional reasons. Regarding Claim 2, the Office Action incorrectly describes element **66** of Jones as a mobile locking element that is located between the passageway and the periphery of the head. Office Action, page 2. Element **66** of Jones, as described above, is in fact “a third intermediate portion” of the cutting filament **10** that is “wedged into the locking channels **42** at the base portion of the passageway **12**.” Jones, col. 4, lines 27–32. Element **66** is thus part of the filament **10** of Jones, and is not a movable locking element.

Regarding Claim 6, the Office Action states that “the locking element is acted upon by a pushing member (66).” Office Action, page 2. As stated above, element 66 is a third intermediate portion of the filament 10 and is thus not a pushing member. Notwithstanding this fact, and according to the Examiner’s own (incorrect) definition of element 66 as a “movable locking element,” the Examiner’s statement can only be interpreted to mean that the locking element “66” is acted upon by itself (a pushing member “66”). An element cannot be acted upon by itself, and thus even the Examiner’s incorrect interpretation of Jones does not render Claim 6 obvious.

Rejection of Claims 7, 8, 11, and 12 under 35 U.S.C. § 103

Claims 7, 8, 11, and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones in view of Moore and further in view of Allis. Allis does not cure all of the deficiencies of Jones or Moore. Claims 7, 8, 11, and 12 depend from independent Claim 1. Therefore, for at least the reasons described above, the rejections of Claims 7, 8, 11, and 12 are respectfully traversed.

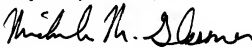
CONCLUSION

In view of the remarks presented above, it is respectfully submitted that independent Claim 1 and all the claims depending therefrom (*i.e.*, Claims 2–18) are in condition for allowance. It is respectfully requested that a Notice of Allowance be issued in due course. The Examiner is requested to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

The patentability of the independent claims has been argued as set forth above, and thus Applicant will not take this opportunity to argue the merits of the rejection with regard to specific dependent claims. However, Applicant does not concede that the dependent claims are not independently patentable and reserves the right to argue the patentability of dependent claims at a later date if necessary.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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